

What Is Claimed Is:

5 1. A filament retaining washer for mounting about the shank of a bone screw deployed in a bone whereby to retain the filament to the bone, said filament retaining washer comprising:

10 a structure having a screw hole extending therethrough for receiving therein the shank of the bone screw deployed in the bone, whereby to secure said structure to said bone, said screw hole defining a first axis, and said structure having a filament hole extending therethrough for receiving a filament therein so as to retain said filament to said structure, said filament hole defining a second axis extending  
15 substantially perpendicular to said first axis, with said second axis being aligned with a bone screw extending through the screw hole.

20 2. A filament retaining washer for mounting about the shank of a bone screw deployed in a bone whereby to retain the filament to the bone, said filament retaining washer comprising:

a body;

5 a downwardly projecting extension connected to  
said body and having a screw hole extending  
therethrough for receiving therein the shank of the  
bone screw deployed in the bone, whereby to secure said  
downwardly projecting extension to said bone, said  
screw hole defining a first axis; and

10 an upwardly projecting extension connected to said  
body and having a filament hole extending therethrough  
for receiving a filament therein so as to retain said  
filament to said upwardly projecting extension, said  
filament hole defining a second axis extending  
substantially perpendicular to said first axis, with  
said second axis being aligned with a bone screw  
extending through the screw hole.

15 3. The filament retaining washer of claim 2  
wherein said downwardly projecting extension has a  
semi-spherical configuration similar to the  
semi-spherical underside of the head of the bone screw.

20 4. The filament retaining washer of claim 2  
wherein said body forms a recess aligned with said

screw hole, said recess receiving the head of the bone screw.

5           5.   The filament retaining washer of claim 2 wherein the filament is a suture.

          6.   The filament retaining washer of claim 2 wherein the filament is a cable.

10           7.   The filament retaining washer of claim 6 wherein said upwardly projecting extension is configurable so as to restrain the cable within said filament hole.

15           8.   The filament retaining washer of claim 7 wherein said upwardly projecting extension contains a set screw hole communicating with said filament hole, and a set screw disposed in said set screw hole for selectively engaging said cable so as to lock said  
20   cable relative to said upwardly projecting extension.

9. The filament retaining washer of claim 7 wherein said upwardly projecting extension is crimpable.

5 10. The filament retaining washer of claim 9 wherein said crimpable upwardly projecting extension has a trapezoidal cross-section.

10 11. The filament retaining washer of claim 2 further comprising a second upwardly projecting extension connected to said body and having a filament hole extending therethrough.

15 12. A system for securing an object to a bone, said system comprising:

a bone screw;

a washer comprising:

a body;

20 a downwardly projecting extension connected to said body and having a screw hole extending therethrough for receiving therein the shank of said bone screw deployed in the bone, whereby to secure said downwardly projecting extension to said bone, said

screw hole defining a first axis, with said second axis being aligned with a bone screw extending through the screw hole; and

an upwardly projecting extension connected to said body and having a filament hole extending therethrough, for receiving a filament therein so as to retain said filament to said upwardly projecting extension, said filament hole defining a second axis extending substantially perpendicular to said first axis; and

a filament received by said filament hole, said filament securing the object to said bone.

13. The system of claim 12 wherein said downwardly projecting extension has a semi-spherical configuration similar to the semi-spherical underside of the head of the bone screw.

14. The system of claim 12 wherein said body forms a recess aligned with said screw hole, said recess receiving the head of the bone screw.

15. The system of claim 12 wherein the filament is a suture.

5 16. The system of claim 12 wherein the filament is a cable.

10 17. The system of claim 16 wherein said upwardly projecting extension is configurable so as to restrain the cable within said filament hole.

15 18. The system of claim 17 wherein said upwardly projecting extension contains a set screw hole communicating with said filament hole, and a set screw disposed in said set screw hole for selectively engaging said cable so as to lock said cable relative to said upwardly projecting extension.

20 19. The system of claim 17 wherein said upwardly projecting extension is crimpable.

20. The system of claim 19 wherein said crimpable upwardly projecting extension has a trapezoidal cross-section.

21. The system of claim 12 further comprising a second upwardly projecting extension connected to said body and having a filament hole extending therethrough.

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22. The system of claim 12 further comprising a bone plate having a hole extending therethrough, with the shank of said bone screw passing therethrough, and said filament retaining washer being secured about the shank of said bone screw, between said bone and the head of said bone screw.

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23. The system of claim 15 wherein said suture holds a piece of mesh to the bone.

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24. A method for securing an object to a bone, said method comprising:

providing a screw, a filament and a suture retaining washer, said suture retaining washer comprising:

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a body;

a downwardly projecting extension connected

to said body and having a screw hole extending  
therethrough for receiving therein the shank of a bone  
screw deployed in the bone, whereby to secure said  
downwardly projecting extension to said bone, said  
5 screw hole defining a first axis; and

an upwardly projecting extension connected  
to said body and having a filament hole extending  
therethrough for receiving a filament therein so as to  
retain said filament to said upwardly projecting  
10 extension, said filament hole defining a second axis  
extending substantially perpendicular to said first  
axis, with said second axis being aligned with a bone  
screw extending through the screw hole;

securing said washer to the bone with said  
15 screw, with said filament extending through said  
filament hole; and

using said filament to secure the object to the  
bone.

20 25. The method of claim 24 wherein said filament  
is a cable, and further comprising the step of locking  
said cable to said suture retaining washer.



26. The method of claim 24 wherein said filament is suture.

27. The method of claim 26 wherein said object is a piece of soft tissue.

28. The method of claim 26 wherein said object is a piece of mesh.

29. The filament retaining washer of claim 2 wherein said downwardly projecting extension is configured to engage a corresponding recess formed in a bone plate so as to prevent rotation of said filament retaining washer relative to the bone plate.

30. The system of claim 12 wherein said downwardly projecting extension is configured to engage a corresponding recess formed in a bone plate so as to prevent rotation of said filament retaining washer relative to the bone plate.

31. The filament retaining washer of claim 6 wherein said cable is braided cable.

32. The filament retaining washer of claim 6 wherein said cable is wire.

5 33. The system of claim 16 wherein said cable is braided cable.

34. The system of claim 16 wherein said cable is wire.

35. The method of claim 25 wherein said object is bone.

36. The method of claim 24 wherein said washer is secured to said bone so that said washer is countersunk into the bone.

37. A method for securing an object to a bone, said method comprising:

20 providing a screw, a filament and a suture retaining washer, said suture retaining washer comprising:

5 a structure having a screw hole extending  
therethrough for receiving therein the shank of the  
bone screw deployed in the bone, whereby to secure said  
structure to said bone, said screw hole defining a  
first axis, and said structure having a filament hole  
10 extending therethrough for receiving a filament therein  
so as to retain said filament to said structure, said  
filament hole defining a second axis extending  
substantially perpendicular to said first axis, with  
said second axis being aligned with a bone screw  
extending through the screw hole;

securing said washer to the bone with said screw,  
with said filament extending through said filament  
hole; and

15 using said filament to secure the object to the  
bone.

20 38. A filament retaining washer for mounting  
about the shank of a bone screw deployed in a bone  
whereby to retain the filament to the bone, said  
filament retaining washer comprising:

a body;

5 a downwardly projecting extension connected to  
said body and having a screw hole extending  
therethrough for receiving therein the shank of the  
bone screw deployed in the bone, whereby to secure said  
downwardly projecting extension to said bone, said  
screw hole defining a first axis; and

10 an upwardly projecting extension connected to said  
body and having a filament hole extending therethrough  
for receiving a filament therein so as to retain said  
filament to said upwardly projecting extension, said  
filament hole defining a second axis extending  
substantially perpendicular to said first axis, with  
said upwardly projecting extension being displaced  
laterally and longitudinally from said downwardly  
15 projecting extension.

20 39. A filament retaining washer for mounting  
about the shank of a bone screw deployed in a bone  
whereby to retain the filament to the bone, said  
filament retaining washer comprising:

a structure having a screw hole extending  
therethrough for receiving therein the shank of the  
bone screw deployed in the bone, whereby to secure said

structure to said bone, said screw hole defining a first axis, and said structure having a filament hole so as to retain said filament to said structure, said filament hole defining a second axis extending substantially perpendicular to said first axis, with said second axis extending parallel to a third axis extending through said first axis.

40. A filament retaining washer according to claim 39 wherein said screw hole comprises a spherical recess about its upper end for receiving therein the underside of the head of a bone screw whose shank passes through the screw hole.

41. A filament retaining washer according to claim 39 wherein said washer has a diameter substantially the same as the head of a bone screw whose shank is sized to pass through the screw hole.

42. A filament retaining washer according to claim 39 wherein said filament hole comprises a pair of openings extending through said structure, wherein said

pair of openings are aligned with one another along said second axis.

43. A filament retaining washer according to claim 39 wherein said filament hole is configured so that a filament extending therethrough will be locked to the washer when a bone screw extending through the screw hole is fully tightened down.

44. A filament retaining washer according to claim 39 wherein said filament hole is configured so that a filament extending therethrough will be movable relative to the washer when a bone screw extending through the screw hole is fully tightened down.